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AN ABANDONED PLEISTOCENE RIVER CHANNEL IN EASTERN INDIANA.

RUSH and Decatur counties in southeastern Indiana are at present drained by Flat Rock creek and Clifty creek. The former has its source in Henry and the latter in Decatur county. Both flow in the same general southwesterly direction, and occupy deep channels which they have eroded in the hard and homogeneous limestone of the Niagara age. They discharge their waters into the east fork of the White river, the Flat Rock above the City of Columbus and the Clifty below. During one of the later stages of the Pleistocene period, and perhaps extending into the recent period, these counties were drained by a stream whose channel had a width of forty rods and a depth of ten or twelve feet, as shown by its well-marked banks composed of coarse river gravel. The elevation of the upper part of this stream was thirty feet above that of the rock bed of the recent streams. It had a more southerly course than these, having its point of departure from the present Flat Rock creek near Rushville, and its point of union with the present Clifty creek near Milford. As indicated by the map, the river may be described in four sections.

I. From a point about three miles above Moscow P.O., the old channel, called in this region "Hurricane," may be traced in a southerly course midway between the Flat Rock creek and the Little Flat Rock creek until it encounters the latter near the county line where the latter's course is westerly. Throughout this stretch the old channel has an elevation considerably higher than the modern streams. Comparatively little water now runs through this channel except in flood time.

II. From the point where the old channel encounters the present Little Flat Rock creek to a point about a mile below

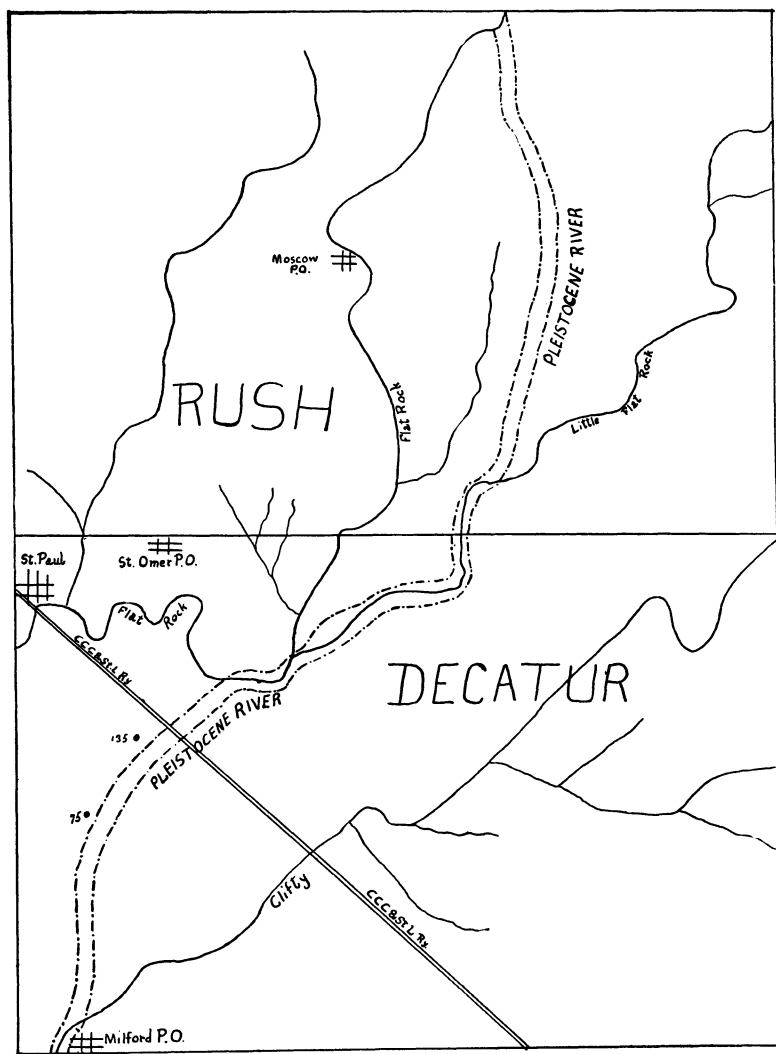
the junction of the Little Flat Rock creek with the Flat Rock creek, the old and the new channels approximately coincide. The old channel has been modified and lowered to about the level of that of the present streams.

III. The old channel departs from the recent channel at the point last described, and may be traced a little west of south to Milford P.O. It is about thirty feet above the recent channel of the Flat Rock creek at the point of departure, and has but a slight fall. The Flat Rock creek, in cutting its channel toward the north from the point where it left this ancient river, has carried away its water supply, leaving the abandoned part of the old river a relatively high marshy region known to the early settlers as "Beaver Pond." Recently an open ditch has been cut through it converting it into fertile corn and wheat land.

IV. From Milford the present Clifty creek flows through the old channel and has modified it, as in the case of the Little Flat Rock creek above mentioned.

If the Flat Rock and the Little Flat Rock creeks existed contemporaneously with the old stream they, as well as Clifty creek, were tributaries to it at the points named as their confluence, and doubtless flowed at the same relative level and had a less rapid fall than now. The evidence collected in regard to the bed of the old stream shows that it ran over the Niagara limestone in the upper part of its course with the exception of the region between the Flat Rock creek and Clifty creek (Section III.), where it flowed over Pleistocene deposits of considerable depth as shown by well sections. One of these, just below the C. C. C. & St. L. Ry. (see map), penetrated sand, clay, and boulder clay to a depth of 135 feet without reaching rock. Another, a short distance below, is seventy-five feet deep in similar deposits without reaching their bottom.

The facts so far observed do not show precisely when the stream originated nor exactly how long it continued before its waters were diverted into their present courses. It seems probable, however, that it originated immediately after the retreat of the ice from the region, and was a part of the first definite system



Pleistocene River in Eastern Indiana - Beachler.

Scale — one mile

of drainage that developed after the ice melted away. This would make it originate in the closing stages of the Pleistocene period. From the fact that the present Flat Rock has cut its channel in limestone about sixty feet at St. Paul below the bottom of the old channel, it would appear that it had been essentially abandoned a considerable time ago. Why the Flat Rock abandoned it at Moscow, and again south of St. Omer P.O., after it had reunited with it, I am not prepared to say. Nor can I say that it may not possibly have been a subglacial channel that was abandoned as soon as the ice melted away and left its waters free to follow the lowest depression of the surface.

The existence of the old channel north of the Little Flat Rock creek was first pointed out, so far as I know, by Dr. Frank Howard, of St. Paul, Indiana, who also assisted the writer in tracing out the channel for the purpose of preparing the map.

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